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Carl Pomerance* (carl.pomerance@dartmouth.edu), Mathematics Department, Dartmouth College, Hanover, NH 03784, and **Douglas Ulmer** (douglas.ulmer@math.gatech.edu), School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332. *Balanced subgroups of the multiplicative group.*

Say a subgroup G of the multiplicative group modulo n is *balanced* if with the usual set of representatives, each coset of G has the same number of elements in the interval $(0, n/2)$ as in $(n/2, n)$. It was recently shown that this concept is related to the ranks of certain elliptic curves over function fields. In this paper we give a useful criterion for a subgroup to be balanced and we make progress towards a conjecture that almost all cyclic balanced subgroups belong to two simple families. (Received August 23, 2012)