Lacunary partition functions

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Abstract. A function on the natural numbers which is almost always 0 is called lacunary. Euler's pentagonal number theorem and other identities for q-series involving theta or false theta functions give examples of partition functions which are trivially lacunary. A number of less obvious examples have been found by Serre, Gordon and Robins, and Andrews, Dyson, and Hickerson using the arithmetic of quadratic fields. We combine the theory of Bailey chains and estimates involving quadratic forms to demonstrate that infinite families of lacunary partition functions are widespread.