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Madeleine Barowsky* (mbarowsk@wellesley.edu), **William Damron**, **Andres Mejia**,
Frederick Saia, **Nolan Schock** and **Katherine Thompson**. *Classically Integral Quadratic
Forms Excepting at Most Two Values.*

The study of universal quadratic forms has long been of interest to number theorists. Quadratic forms which are “almost universal,” failing to represent some finite set of numbers, are less explored, though Halmos (1938) published a list of diagonal quaternary forms that except just one value. We seek to determine for which $\{m, n\}$ there exists a quadratic form excepting precisely those values. Generalizing the techniques developed by Bhargava and Hanke (2005) for universal quadratic forms, we use escalator lattices, modular forms, and computational methods to answer this question for quaternary forms. We develop new strategies to handle forms of higher dimensions, yielding an enumeration of and proofs for the 73 possible pairs that a classically integral, positive definite quadratic form may except. (Received August 02, 2016)