1100-11-70 **Michael J Griffin*** (mjgrif3@emory.edu), Department of Mathematics & Computer Science, Emory University, Atlanta, GA 30322, and **Ken Ono** and **Ole Warnaar**. *A framework of Rogers-Ramanujan identities and their arithmetic properties.*

The two Rogers–Ramanujan q-series

$$\sum_{n=0}^{\infty} \frac{q^{n(n+\sigma)}}{(1-q)\cdots(1-q^n)},$$

where $\sigma = 0, 1$, play many roles in mathematics and physics. By the Rogers–Ramanujan identities, they are essentially modular functions. Their quotient, the Rogers–Ramanujan continued fraction, has the special property that its *singular values* are algebraic integral units. We find a framework which extends the Rogers–Ramanujan identities to doubly-infinite families of q-series identities. If $a \in \{1, 2\}$ and $m, n \geq 1$, then we have

$$\sum_{\substack{\lambda \\ \lambda_1 \leq m}} q^{a|\lambda|} P_{2\lambda}(1, q, q^2, \ldots; q^n) = \text{“Infinite product modular function”}.$$

The $P_\lambda(x_1, x_2, \ldots; q)$ are “extended” *Hall–Littlewood polynomials*. We identify our q-series as specialized characters of affine Kac–Moody algebras, and show that their singular values are algebraic. Generalizing the Rogers–Ramanujan continued fraction, we prove in the case of $A_{2n}^{(2)}$ that the relevant q-series quotients are again algebraic integral units. (Received January 27, 2014)