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Matthew C Russell*, russell2@math.rutgers.edu. *Automated exploration of Somos-like sequences, noncommutative recursions, and the Laurent phenomenon.*

The Somos sequences are recurrence relations that surprisingly produce only integers. Their integrality turns out to be a special case of the Laurent phenomenon. Since their initial discovery, additional families of sequences with this property have been discovered. We will discuss methods for searching for new sequences with the Laurent phenomenon - with the conjecturing and proving both automated. Examination of the computer-generated proofs in individual cases can then lead to human proofs for new infinite families. Finally, we will also exhibit a family of sequences of noncommutative variables, recursively defined using monic palindromic polynomials in $\mathbb{Q}[x]$, and show that each possesses the Laurent phenomenon. (Received January 20, 2015)