1056-37-1206   **Laura DeMarco*** (`demarco@math.uic.edu`), Department of Mathematics, University of Illinois at Chicago, 851 S Morgan St (M/C 249), Chicago, IL 60607, and **Matt Baker**, Georgia Institute of Technology. *Preperiodic points: from algebraic to complex.*

We combine analytic and arithmetic techniques to study the dynamics of complex polynomials. For quadratic polynomials $z^2 + c$, our main result is that the set of parameters c for which two given complex numbers a and b are both preperiodic is finite iff $a^2 \neq b^2$. This is a dynamical analog of recent results of Masser and Zannier concerning simultaneous torsion sections on families of elliptic curves. This is joint work with Matt Baker. (Received September 21, 2009)