Prime rational functions.

Let $f$ be a complex rational function. If $f$ can be written as the composition $g \circ h$ of two rational functions $g$ and $h$ which are not units under the operation of function composition, we say that $f$ is composite. Otherwise, we say that $f$ is prime. We give sufficient conditions for a complex rational function $f$ to be prime through various means. Specifically, making use of the set of units under function composition, we determine conditions on the multiplicities of the zeros and poles of $f$ which guarantee that it is prime. We also consider some instances dealing strictly with the case of complex polynomials. (Received January 29, 2019)