1083-13-184 **Greg G. Oman*** (goman@uccs.edu), 1420 Austin Bluffs Parkway, Colorado Springs, CO 80918.
Rings whose multiplicative endomorphisms are power functions.

Let R be a ring. Then R is called an *E-ring* provided every additive endomorphism of R is given by multiplication by a scalar (that is, if for every endomorphism f of $(R, +)$, there exists $r \in R$ such that $f(x) = rx$ for all $x \in R$). Thus, in a sense, the E-rings are the rings for which all additive endomorphisms are "canonical". Such rings are well-studied in the literature. In this talk, we consider the multiplicative analog of this notion. Let R be a commutative ring with identity, and let n be a positive integer. Then the power function $f(x) := x^n$ is easily seen to be 0-preserving monoid endomorphism of the structure $(R, \cdot, 0, 1)$. Say that a commutative ring R with identity is a *P-ring* provided every 0-preserving multiplicative monoid endomorphism (as above) is equal to a power function (i.e. every such endomorphism is "canonical"). We determine the P-rings up to isomorphism. (Received August 27, 2012)