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**David E. Dobbs\*** (dobbs@math.utk.edu), Department of Mathematics, University of Tennessee, Knoxville, TN 37996-0614, and **Andrew J. Hetzel**. *Using going-up to characterize going-down domains.*

A (commutative integral) domain  $R$  is called an AGU-domain if  $R \subseteq T$  satisfies the going-up property whenever  $T$  is an algebraic extension domain of  $R$  such that the natural map  $\text{Spec}(T) \rightarrow \text{Spec}(R)$  sends the maximal spectrum  $\text{Max}(T)$  onto  $\text{Max}(R)$ . Any domain of (Krull) dimension 1 is an AGU-domain, as is any absolutely injective (ai-) domain. A quasilocal domain is an AGU-domain if and only if it is a going-down domain. A partial generalization is given for rings with nontrivial zero-divisors. An example is given of a two-dimensional Prüfer (hence going-down) domain with exactly two maximal ideals which is not an AGU-domain. (Received February 03, 2010)