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**Bruce Olberding\*** (olberdin@nmsu.edu), Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM 88003-8001. *Integrally closed rings and the Zariski-Riemann space of valuation rings*. Preliminary report.

Let  $F$  be a field, and let  $D$  be a subring of  $F$ . The Zariski-Riemann space  $\mathfrak{X}$  of  $F/D$  consists of the valuation rings that contain  $D$  and have quotient field  $F$ . Zariski introduced a topology on  $\mathfrak{X}$  under which  $\mathfrak{X}$  is a spectral space. Moreover,  $\mathfrak{X}$  can be viewed as a locally ringed space in a natural way. We discuss some applications of this point of view to the structure of subrings of  $F$  that are integrally closed in  $F$ . (Received February 18, 2013)