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([schwede@math.utah.edu](mailto:schwede@math.utah.edu)) and **Kevin Tucker**. *Covers of rational double points in mixed characteristic.*

We further the classification of rational surface singularities. Suppose  $(S, \mathfrak{n}, \|\cdot\|)$  is a strictly Henselian regular local ring of mixed characteristic  $(0, p > 5)$ . We classify functions  $f$  for which  $S/(f)$  has an isolated rational singularity at the maximal ideal  $\mathfrak{n}$ . The classification of such functions are used to show that if  $(R, \mathfrak{m})$  is an excellent, strictly Henselian, Gorenstein rational singularity of dimension 2 and mixed characteristic  $(0, p > 5)$ , then there exists a split finite cover of  $\text{Spec}(R)$  by a regular scheme. We give an application of our result to the study of 2-dimensional BCM-regular singularities in mixed characteristic. (Received September 17, 2019)