

The moduli space of cubic surfaces marked by their 27 lines admits multiple compactifications arising from different perspectives. By work of Gallardo-Kerr-Schaffler, it is known that Naruki's cross-ratio compactification is isomorphic to the normalization of the Kollár, Shepherd-Barron, Alexeev (KSBA) compactification parametrizing pairs  $(S, (\frac{1}{9} + \epsilon) D)$ , where  $D$  is the sum of the 27 marked lines on  $S$ , along with their stable degenerations. In this talk, we show that the normalization assumption is unnecessary by proving that this KSBA compactification is smooth. Additionally, we show it is a fine moduli space. This is achieved by studying the automorphisms and the  $\mathbb{Q}$ -Gorenstein obstructions of the stable pairs it parametrizes. This is joint work with Hanlong Fang and Xian Wu.