We study the arithmetic properties of a family of Calabi-Yau threefolds originally studied by Hosono and Takagi in the context of mirror symmetry. The geometry of these varieties endows them with a 2-torsion Brauer class. Under mild conditions, we show this Brauer class prevents the rational points from being dense in the adelic points. This is joint work with Katrina Honigs, Alicia Lamarche, and Isabel Vogt.