1075-14-207 **Adrian Clingher**, **Charles F. Doran*** (charles.doran@ualberta.ca), **Jacob Lewis** and **Andrey Novoseltsev**. *K3 Modular Parametrization and Calabi-Yau Threefold Variations.* Preliminary report.

We'll begin by recalling the Doran-Morgan classification of "mirror-compatible" integral variations of Hodge structure over the thrice punctured sphere. These fall into fourteen equivalence classes, according to shared real structures. Thirteen of these readily admit geometric realization via the Batyrev-Borisov mirror construction. The "14th case" has long proved elusive, despite strong hints coming from analysis of GKZ-hypergeometric systems and Hodge theory. A geometric solution will be presented, blending K3 surface fibrations, modular parametrizations, and a detailed analysis of (singular) toric hypersurfaces and complete intersections. (Received August 30, 2011)