1068-14-63 **Adrian Clingher***, Dept. of Mathematics and Computer Science, University of Missouri - St. Louis, One University Blvd., St. Louis, MO 63121, and **Charles F. Doran**, Department of Mathematical Sciences, University of Alberta, Edmonton, Alberta , Canada. *K3 Surfaces of High Picard Rank: A Classification in Terms of Siegel Modular Forms.*

I will discuss a special family of complex algebraic K3 surfaces polarized by the rank seventeen lattice H+E8+E7. In terms of Hodge theory, these surfaces are naturally related to principally polarized abelian surfaces. I will outline the geometry of the correspondence as well as present an explicit classification of these special K3 surfaces in terms of Siegel modular forms. Finally, if time permits, I will discuss some recent work extending these results to lattice polarizations of type H+E7+E7. (Received January 11, 2011)