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Sean A Broughton* (allen.broughton@rose-hulman.edu), Department of Mathematics, Rose-Hulman Institute of Technology, 5500 Wabash Ave., Terre Haute, IN 47803. *Enumeration of the Equisymmetric Strata of the Moduli Space of Surfaces of Low Genus*. Preliminary report.

Two surfaces are called equisymmetric, or are said to have the same symmetry type, if the two surfaces' conformal automorphism groups determine conjugate finite subgroups of the mapping class group. The subset of the moduli space corresponding to surfaces equisymmetric with given surface forms a locally closed subvariety of the moduli space, called an equisymmetric stratum. In previous work, it was shown that the equisymmetric strata are irreducible, finite in number, have easily computed dimensions, and do form a stratification of the moduli space. The stratification has been used to derive information about the cohomology of the mapping class group. Recent advances in computer calculation with finite groups allow for the possibility of explicitly enumerating the equisymmetric strata for moduli spaces of low genus. In this preliminary report we give some initial findings on this enumeration problem. (Received February 21, 2005)