1084-20-47 **Daniel E. Frohardt*** (danf@math.wayne.edu), Department of Mathematics, Wayne State University, Detroit, MI 48202, and **Robert Guralnick** and **Kay Magaard**. *Primitive Monodromy Groups of Genus at most Two.*

Let G be a transitive subgroup of S_n with generators $\sigma_1, \ldots, \sigma_r$ such that $\prod \sigma_i = 1$. The *genus* g of this system of generators is defined to be the non-negative integer $\left(\sum Ind(\sigma_i) - 2(n-1)\right)/2$, where $Ind(\sigma)$ is the permutation index of σ. It follows from Riemann's Existence Theorem that G is the monodromy group of a covering of the Riemann sphere by a compact Riemann surface of genus g.

It is known that for fixed genus g there is a finite set $\mathcal{E}(g)$ of simple groups such that every non-abelian composition factor of G is either an alternating group or a member of $\mathcal{E}(g)$. I will discuss progress toward determining the minimal set $\mathcal{E}(g)$ explicitly for small values of g. The present result bounds n when G has a composition factor in $\mathcal{E}(g)$, $g \leq 2$, G acts primitively, and G is an almost simple group of Lie type acting in a point action. I will also explain the significance of this last condition. (Received August 13, 2012)