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**David Ishii Smyth\*** ([dsmyth@math.harvard.edu](mailto:dsmyth@math.harvard.edu)), Harvard University Dept. of Mathematics, 1 Oxford Street, Cambridge, MA 02138. *New Modular Compactifications of the Moduli Space of Curves.*

Let  $\pi : \mathcal{C} \rightarrow \overline{M}_{g,n}$  be the universal curve over the moduli space of  $n$ -pointed stable curves of genus  $g$ . We associate to any  $\pi$ -nef line-bundle  $\mathcal{L}$  on the universal curve, a proper Deligne-Mumford stack (or algebraic space)  $\overline{M}_{g,n}(\mathcal{L})$ , whose points parametrize  $n$ -pointed curves of arithmetic genus  $g$  with all manner of exotic singularities. This produces an enormous collection of birational contractions of  $\overline{M}_{g,n}$ , whose geometry is still far from understood. (Received August 16, 2008)