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**Beth Malmskog\*** ([beth.malmskog@gmail.com](mailto:beth.malmskog@gmail.com)) and **Christopher Rasmussen**. *Picard curves over  $\mathbb{Q}$  with good reduction away from  $p = 3$ .*

Following a similar project by Smart, we describe an algorithm to determine all Picard curves over  $\mathbb{Q}$  with good reduction away from 3, by establishing a correspondence between the isomorphism classes of such curves and equivalence classes of certain quintic binary forms possessing a rational linear factor. An exhaustive list of integral models is determined. As part of this algorithm, we find all  $S$ -unit solutions to  $x + y = 1$  within relevant number fields and where the finite primes in  $S$  divide 3. We include new results that apply to solving  $S$ -unit equations under some conditions. (Received July 29, 2014)