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Aliza A. Steurer* (asteurer@math.umd.edu), University of Maryland, Department of Mathematics, College Park, MD 20742. *On the Galois group of the 2-class tower of a quadratic field.* Preliminary report.

Let G be the Galois group of the maximal unramified 2-extension, $k^{nr,2}$, of $k = \mathbb{Q}(\sqrt{-2379})$. Michael Bush [1] showed that $k^{nr,2}/k$ is a finite extension by computing 8 explicit presentations for the possibilities for G . Each presentation defined a finite group. We study these groups and present a method where we express G as an extension of the dihedral group of order 8 by an abelian group. This method narrows the possibilities for G down to 4. We also discuss related problems.

[1] M.R. Bush, Computation of Galois groups associated to the 2-class towers of some quadratic fields, J. Number Theory 100 (2003) 313-325. (Received September 27, 2005)