1086-F5-2403 **Stacy G. Langton*** (stacy.g.langton@gmail.com), Dept. of Mathematics and Computer Science, University of San Diego, 5998 Alcala Park, San Diego, CA 92110. *Albert Girard's Iterative Method for solving Cubic Equations.* Preliminary report.

In 1629, Albert Girard (1595–1632) published a pamphlet, *New Discoveries in Algebra*. The contents of this work range from basic arithmetic to the theorem that the coefficients of a polynomial equation are (what we call) the elementary symmetric functions of the roots. In the course of a discussion of cubic equations, Girard gives an iterative method for solving certain cubic equations numerically. "Here," he says, "is a small rule using Tangents and Sines, wonderful in its operation and easy to use." Girard gives no derivation or proof of his method, only a numerical example and a geometrical diagram. In this talk, I will show how to interpret Girard's diagram, so as to explain and justify his algorithm. (Received September 25, 2012)