1054-51-32   **John Sarli*** (`jsarli@csusb.edu`), Department of Mathematics, California State University, 5500 University Parkway, San Bernardino, CA 92407. *The Intrinsic Conics of the Hyperbolic Plane.*

We explore Jacob Steiner's definition of a projective conic by taking it as the definition of an intrinsic conic for any planar incidence geometry. It is well known, for example, that in the real affine plane this definition produces all conics with their affine types distinguished by the invariants of the generating affine transformation; in particular, if the collineation is (anti)conformal the conic is either a circle or a rectangular hyperbola. In the hyperbolic plane the situation is more intricate: There is a considerable variety of intrinsic conics even though all collineations are (anti)conformal. We classify these conics and provide metric characterizations for each congruence class. Further, we show there is a natural duality among congruence classes manifested by inversion in certain equidistant curves. (Received August 10, 2009)