David Mumford showed that a general Prym variety, constructed from an unramified double cover of an algebraic curve, is not a Jacobian, but those constructed from covers of hyperelliptic curves are hyperelliptic Jacobians. Numerical experiments indicate that the arguments of periods of hyperelliptic curves cluster around a single value. This talk will explore the distribution of the periods of hyperelliptic Pryms from this perspective. (Received February 28, 2017)