1086-11-2307 **William A Stein*** (wstein@uw.edu), University of Washington, Seattle, WA 98122. *Elliptic curves over Q(sqrt(5)).* Preliminary report.

I will describe a speculative project to enumerate every elliptic curve over the field $\mathbf{Q}(\sqrt{5})$, up to the first curve of rank 4. We use an efficient implementation of an algorithm of Dembele and fast sparse linear algebra to compute tables of Hilbert modular forms of weight (2,2) over $\mathbf{Q}(\sqrt{5})$. Then, via a variety of methods, we construct the corresponding elliptic curves. To have any hope to someday reach our far-off goal, the implementations much be highly optimized; moreover, just keeping track of the enormous amount of data we generate is challenging. This is joint work with Jonathan Bober, Alyson Deines, Ariah Klages-Mundt, Benjamin LeVeque, R. Andrew Ohana, Sebastian Pancratz, Ashwath Rabindranath, Paul Sharaba, and Christelle Vincent. (Received September 25, 2012)