1120-42-99   **Matthew Fickus*** (`matthew.fickus@afit.edu`), Department of Mathematics and Statistics, Air Force Institute of Technology, 2950 Hobson Way, Wright-Patterson AFB, OH 45433, and **Dustin G. Mixon** and **John Jasper**. *Equiangular tight frames from hyperovals.*

An equiangular tight frame (ETF) is a set of equal norm vectors in a Euclidean space whose coherence is as small as possible, equaling the Welch bound. Such frames arise in various applications, such as waveform design, quantum information theory, compressed sensing and algebraic coding theory. ETFs seem to be rare, and only a few methods of constructing them are known. We present a new infinite family of complex ETFs that arises from hyperovals in finite projective planes. In particular, we give the first ever construction of a complex ETF of 76 vectors in a space of dimension 19. Recently, a computer-assisted approach was used to show that real ETFs of this size do not exist, resolving a longstanding open problem in this field. Our approach modifies the way Steiner ETFs are constructed from balanced incomplete block designs. (Received February 16, 2016)