1046-O1-392 **Rick Klima*** (`klimare@appstate.edu`), Department of Mathematical Sciences, Appalachian State University, 342 Walker Hall, Boone, NC 28608. *A Maplet for Encoding, Decoding, and Correcting Errors in Golay Codes.* Preliminary report.

Golay codes are often relegated to a secondary role in mathematical coding theory behind more famous heavyweights such as Hamming and Reed-Solomon codes, despite their own utility and rich history of applications. For example, like Hamming codes, the binary G_{23} and ternary G_{11} Golay codes are among the few perfect codes that exist. Also, like Reed-Solomon codes, Golay codes were used in the Voyager 1 and 2 satellites during 1979-1981 when they transmitted color photographs of Jupiter and Saturn back to Earth. A current application of Golay codes is in the United States government standards for automatic link establishment in high frequency radio systems for forward error correction. In this presentation, I will demonstrate a Maplet that a student and I have written for encoding, decoding, and correcting errors in all types of Golay codes. We have found that this Maplet provides a means for teaching Golay codes to students with limited background knowledge and/or computer expertise. (Received August 29, 2008)