Johnathan R Marquardt* (marquardtjohnathan@gmail.com), 322 Marble street, Joliet, IL 60435. A Partial Characterization of the Symmetric Spaces of the Unitary Group of Degree Two and Three. Preliminary report.

This work presents a characterization of specific symmetric spaces of the 2nd degree unitary group, U(2), as well as a characterization of all matrices in U(2). Moreover, the generalized and extended symmetric spaces of U(2) given by inner automorphisms are characterized. Structure and conditions for unitary matrices to be in these symmetric spaces are established through a parameterization of U(2). This work contributes to the ongoing process of characterizing these symmetric spaces. (Received September 22, 2017)