1096-51-689 **Jane Gilman*** (`gilman@rutgers.edu`) and **Linda Keen**. *The Hyperbolic Geometry of* $\mathbb{H}^3$ *Hexagons and* $PSL(2,\mathbb{C})$ *Discreteness Sequences.* Preliminary report.

A subgroup, G, of $PSL(2,\mathbb{C})$ is not discrete if there exists an infinite sequence of distinct elements of the group that converges to the identity. However, there are only ad hoc techniques for finding such a sequence of primitive elements in any given G. If ρ is a non-elementary representation of a rank two free group, F, into $PSL(2,\mathbb{C})$, its image, $\rho(F) = G$, may or may not be discrete or free. However, in all cases there is an ordering of the rational numbers determined by the representation. We call this the *representation ordering*. We use the hyperbolic geometry of $\mathbb{H}^3$ as applied to certain palindromes in G and the representation ordering of the rationals to construct a unique sequence of primitive elements corresponding to a given representation. The conjecture is that this sequence, termed the *core sequence*, will converge to the identity if the group is not discrete, will be finite in the case that the group is discrete with rational pleating locus and will be infinite but the corresponding geodesics will converge in the interior if the group is discrete with irrational pleating locus. We have a conjectural picture of the *stopping hexagons* when the sequence is finite. (Received September 09, 2013)