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Demonstrations with a 15-Inch Diameter “Genesis” Plasma Globe GARRETT TERRY, JAMES MORRIS, SETH SMITH, Francis Marion University — A 15-inch diameter “Genesis” plasma globe from Aurora Plasma Design was used to observe the behavior of a plasma and to perform demonstrations. The plasma globe is a 15-inch diameter glass globe filled with various noble gasses. A high voltage electrode in the center creates an electric field between the electrode and the glass. This electric field is intense enough to ionize the atoms in the noble gases, and this ionization results in long, bright bands of plasma (lightning) streaming between the electrode and the glass. When a person touches the glass surface of the plasma globe, the electric field polarizes atoms in a person’s skin, which results in a larger electric field in the area of contact and a single discharge stream is formed from the electrode to this area of contact. If a conducting metal is placed near the globe, the electric field will heat the metal and a match can be lit by holding it close to the metal. In addition, the plasma globe’s electric field ionizes atoms in nearby spectral tubes, as well as fluorescent tubes, causing them to glow. These plasma globe demonstrations were performed and will be discussed in this presentation.

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