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Raman signatures of the modern pigment (Zn,Cd)S_{1-x}Se_x and glass matrix of a red bead from Magoro Hill archeological site, as a method to recalibrate the historical settlement chronology

Thursday, 12 July 2012 17:30 (2 hours)

Abstract content
   (Max 300 words)

Two glass trade beads, one red and one yellow, retrieved from a secure archaeological context on Magoro Hill, an erstwhile Venda stronghold in South Africa's Limpopo Province, were analyzed with Raman and photoluminescence spectroscopy. Raman spectroscopy identified the pigment coloring the yellow bead as lead tin yellow Type II and the glass as a typical soda-lime-silica glass. Both pigments and glass type were in use over a long time span and therefore the bead cannot be used as a temporal marker. The pigment coloring the red bead, on the other hand, was identified as nano- (Zn,Cd)S_xSe_{x-1} mixed crystals, a pigment that was only widely used in the early 20th century. This date casts doubt on local oral tradition that associates the brick-built structure from which the beads were recovered with Manzinzinzi, a Venda chief who, according to contemporary documentary accounts, had already passed away in the 1880s. The more recent date for the red bead resolves the apparent discord between the oral and written records, suggesting that the building was probably erected and/or occupied by one of Manzinzinzi's successors.

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